

In the Specification:

Please replace the paragraph beginning at page 5, line 17, with the following amended paragraph:

The present invention is directed to providing variable dispersion compensation to a signal. The invention can be embodied in a dispersion discrimination and compensation system including a feedback loop for regulating an amount of dispersion compensation applied by a controllable ~~controlable~~-anti-dispersive element (CADE) to an incoming optical signal. To that effect, the feedback loop includes a dispersion discriminator for accepting a portion of a signal outgoing ~~form~~ from the CADE and to provide a measure of a dispersion characteristic to a processor which controls the amount of dispersion compensation applied by the CADE.

Please replace the paragraph beginning at page 18, line 1, with the following amended paragraph:

The signals P1' and P2' ~~[[']]~~ at the ends of these fibers are then analyzed by passing them through two conventional spectrum detectors 1118a and 1118b coupled to the legs 1112 and 1114. The spectrum detectors 1118a and 1118b may include conventional opto-electronic receivers based on PIN-diodes, APD-diodes or similar components. A processor 1120 coupled to the detectors 1118a and 1118b analyzes the respective signals E1, E2 from the detectors 1118a and 1118b, determines the polarity and magnitude of dispersion in the signal S and outputs the resulting determination in a dispersion polarity and magnitude (DPM) output signal DPM1. The output signal DPM1 gives an indication of polarity and magnitude of dispersion in the optical signal input to the dispersion discriminator, and this indication can be used by a dispersion compensator for compensating the dispersion.